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COUNTRY USSR

DCD REPORT NO.

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1. The meeting was more successful in regard to the series of understandings reached than one might have expected. The Soviet side came prepared to reach an accord and would have "underfulfilled" their plan had they failed to do so. The opening session was cordial and at the end, somewhat blunt, in the indication by Yevgeniy Ivanovich Sklyarov, Section Chief, USSR State Committee for Science and Technology, that defense matters would have to be left out; nonetheless, in private, he later added that perhaps in the future--and depending on the success of this phase of work--it might be possible to expand the scope.
2. Toward the end of the discussions, Sklyarov also indicated that he would have a selling job to do when he returned, an indirect reference to the conservatism of the Central Statistical Administration and perhaps other organizations. It was felt, nonetheless, by all Soviets with whom the matter was discussed, that a positive result would ensue.
3. At the meetings on manpower training and utilization (Subgroup III), the Soviets appeared to be willing to offer more data but, unfortunately, the US representatives who handle such data indicated that the US side could not furnish similar details. Vitaliy Ivanovich Krutov, Chief of Scientific Organization Department, USSR Academy of Sciences, was very agreeable and forthcoming, even to the point of offering detailed specialty data which would be many inches thick. Semen R Mikulinskiy, Deputy Director of the Institute of Science and Technical History, USSR Academy of Sciences, is the co-editor of a new series of books--with D M Gvishiani and Samuel A Kugel', on scientific cadres, for

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example, and appeared to be knowledgeable and to have no bias as his fingertips. Among other items of information passed along, Mikulinich indicated that only five-seven thousand of the rabotniki scientific workers (927, 709 in 1970) do not work in R and D of the 1,700,000 scientists and engineers employed in the national economy, some 50 thousand are employed in R and D. Of the 1.7 million, some 77-80 percent work in higher educational institutions; some 44-45 percent in technical sciences (some, of course, are in vuzy), but the majority are employed in branch research organizations (NII), engaged in work up to and including prototypes and documents for plants; some 3.0 percent are engaged in fundamental science research in the USSR Academy of Sciences, and 3.0 percent in the union republic academies. Of the teachers of higher educational institutions, some 50 percent of their time is spent on teaching, some 50 percent on methodology and research. One could say that about one-third of the teachers are engaged in fundamental research.

4. The Soviets were asked to diagram the cut-off point for R and D as it is used in the USSR. Mikulinich, together with Krutov, drew the following scheme using Russian, as shown:

(III.5) Production - -(proizvodstva)

Prototype - -(opytnyy obratets)

Evaluation - -(otsenka reshativnoy opytov)

RED Testing - -(opytnaya proverka)

(III.4) Development - -(razrabotka)

Applied research - -(prikladnoye issledovaniye)

Basic (fundamental) research - -(fundamental'noye issledovaniye)

As drawn, all items except production are defined as R and D, and will be related to point III.4; manpower employed in non-R and D activities (production) are covered by III.5. [Refer to the joint agreement]

5. There was concern that the nonappearance of Ye Ye Grishayev, who heads the State Committee for Science and Technology's (VSES) finance department, and the substitution of Vladimir Ivanovich Maslennikov for him, indicated a downplaying of the whole exercise. It was directly stated to a US participant that Grishayev is still the head of the Financing R and D subgroup, and only his doctor refused to let him come at the present time. The meeting of the Joint Commission in Moscow on 26 November 1973 should be revealing as to the future potential of this particular meeting.

comment: The agreement, or program of work, for each subgroup of the Joint US/USSR Working Group on Science Policy is available in CRS Central Libraries Division, Document Services Branch.

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COUNTRY USSR

DCD REPORT NO.

SUBJECT Soviet Science Policy/Institute of US Studies/State Committee for Science and Technology's Grip on R & D Funding/Planning Transition to 15 Year Plan/Spending on R & D/Mechanism for Competition/Need for Foreign Technology/Makeup of Academy of Sciences/Overseas Patenting/Scientific Personnel and Salaries

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**SUMMARY** - Georgiy A Arbatov, Director of the Institute of US Studies in Moscow, briefed a group of US scientists in July 1973 on the Soviet science policy. He explained the differing responsibilities in the USSR for basic as opposed to applied research and said that the State Committee for Science and Technology (GKNT) held a grip on all R & D funds. Arbatov in his briefing explained the transition from 5 to 15 year planning to include the entire economy. He said that in the past the Soviet economy had a built-in market, but now the situation was changing to a buyer's economy. Subsidies are used to stimulate consumer acceptance and new investments are tied closely to new R & D results. In some cases where research costs are high, the Soviet system may decide it is cheaper to buy foreign technology. Arbatov explained that various stimuli are used to create competition in the USSR.

Arbatov reviewed the history of the Academy of Sciences and explained the role of the Presidium of the Academy in review of projects. Recently, the Soviets have begun intensifying patent activities overseas. He also explained that the Academy has forecasted technical manpower needs through the year 2000, and has found that there is now a competition between the social and technical disciplines. He further explained the distinctions between various professional degrees and the system of wages, prices, and bonuses.

1. In July 1973, a delegation of US scientists of the Industrial Research Institute (USA) Inc visited scientific and research institutes in the USSR. the fo

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2. At the Institute of US Studies in Moscow, [REDACTED]

Georgiy Arkad'yevich Arbatov, Director  
 Vladimir N Krestyanov, Scientific Secretary  
 Vladimir Spichkin, Secretary for Scientific-Technologic Revolution  
 Inna Sheydina, Assistant to Arbatov

3. Arbatov described his Institute and the Academy of Sciences and the Academy's relation to the State Committee of Science and Technology (GKNT) which he said "had a grip on all Research and Development (R & D) funds (including those of the Academy of Science) in the USSR." Arbatov said basic research is carried on in the Academy of Sciences, and applied research is carried on in the Ministries, and development in the plants. He said the Institute is trying to improve R & D planning by extending the Soviet Five Year Plan to a Fifteen Year Plan by 1976 and incorporating R & D in it by using technological forecasting. The new system will include plans for the entire economy and R & D will be a part of it. This new approach to planning is in the preliminary stage and is being done by the GKNT and the Academy of Sciences. They feel that they have not spent enough on development (1/3) in relation to research (2/3) in the past. Arbatov said that personally he feels the ratio should be changed by spending more on development and by improving the transfer of technology. He said competition exists in the USSR, but there is no secrecy between competitive groups.
4. Arbatov said that in the past they had a "built-in" market for products. He feels now the economy is changing gradually from a seller's to a buyer's market. Some plants can now produce a product no one buys; this overproduction is on a small scale to date. Arbatov admitted they have problems in increasing consumption of new technology, but that they can use pricing (subsidy) to stimulate or control consumer acceptance. They are also tying in new investments closely with new R & D results. They also now are looking at specialization domestically and are thinking about international agreements which will permit research specialization in different countries to reduce the cost of duplicate research. Then when they look at the high cost of research they will consider that it may be cheaper to buy technology elsewhere.
5. In discussing the mechanism which stimulates competition in the USSR, Arbatov very clearly stated that because of external forces the USSR had elected to go it alone in defense. The USSR, on the other hand, has had long standing agreements with some of its allies for specialized machinery. Arbatov said the fact the USSR had elected to go it alone in defense should not obscure an inevitable trend toward international cooperation in other areas in his opinion. In internal competition in a plant, performance plays the key role and determines: (a) job tenure, and (b) salary/bonus.
6. The Academy of Sciences, according to Arbatov, has approximately 50 thousand professionals working in over one hundred institutes mostly on basic (fundamental) research. The most distinguished of these professionals hold the rank of corresponding members, and above this rank are the academicians. There are approximately four hundred corresponding members and 240 academicians. From the full group of corresponding members and academicians (this group is the main power of the Academy), 25 people form the Presidium. This Presidium meets frequently and reviews not only administrative matters but also technical developments. The budget of the Academy is approximately six to seven billion rubles per year. Breakthroughs can be funded by the Academy or by the GKNT and the Academy working together, to form a new unit in a Ministry, a new Institute, or a new Department in an Institute.

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7. Research in universities is used primarily for teaching. In Novosibirsk, however, they are working on combining the Academies of Sciences and the universities, and building up applied research and development organizations around the center. Arbatov referred to this as like "route 128 or Stanford."
8. Arbatov pointed out that the Paton Welding Institute (which is part of the Academy of Sciences) in Kiev is unique since it goes completely from research through development and small scale production. Most development, however, is performed in the Production Ministries or at the laboratories of the larger plants in these Ministries.
9. Arbatov pointed out that the Soviets were now intensifying their overseas patent activities. He said he felt that the USSR previously had paid too little attention to patents and said the absence of trade with the US was one reason. He said they are beginning to patent vigorously.
10. The Institute of the USA, according to Arbatov, was established about five years ago and does long term studies on trends in the US, to determine how the USSR might be affected or get involved (e g, the energy crisis). The Institute makes forecasts of what should be possible; its main subjects are foreign policy, science, trade, and technology.
11. In planning for technical manpower needs, and also for labor needs, Arbatov said they try to forecast. Such forecast have been made to the year 2000. He explained there is a trend away from science and there is now a competition between the social and technical disciplines.
12. Salaries in the Soviet Union are based on the position held and the degree level of the individual. The candidate degree in the USSR is somewhat equivalent, but less than a PhD in the US. A doctorate degree in the USSR usually requires six or seven years work beyond the candidate degree and those with doctorate degrees are paid about one-third more than those with candidate degrees occupying the same positions. The spread between a beginning scientist and the head of an institute (a top academician) is about 10 to 1. In the Academy of Sciences, institute directors are scientists, and deputy directors are administrators.
13. Arbatov explained that in the Soviet organizational hierarchy, state committees are slightly higher than ministries; Vladimir Alekseyevich Kirillin, who as Chairman of the State Committee for Science and Technology, is one of the highest ranking Soviet officials. Arbatov explained further that at a certain point salary for Soviet scientists becomes unimportant, and prizes and recognition by the government were scientists' main motivations. Savings cannot be invested. Income tax is a maximum of 13 per cent. Rents are low; Arbatov, for example, pays 30 rubles per month (US\$45) for his flat. A three room hotel suite rents for 7.5 rubles per day. Education, health care, and retirement are provided free by the State. Thus, there is no simple basis for comparability of scientists in the US and USSR.

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